

IBM Maximo solution for health, safety and environment



*Integrating health, safety and environmental processes
with work and asset management*

Highlights

- Provides a central application for reporting incidents spanning work, personnel, safety, health and environmental areas
 - Supports investigations to analyze recurring incidents or defects when root cause analysis or after action review is required
 - Provides traceability into historical incidents, defects, work orders and earlier corrective actions
 - Ensures transparency and visibility across operations, safety, maintenance and engineering domains
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The primary objectives of health, safety and environment initiatives are to reduce overall risk, to comply with appropriate regulations, and to create a safe and efficient operating environment for a company. Achieving these objectives is as much about standardizing health, safety and environment practices as it is about integrating these practices in day-to-day operations management. An IBM® Maximo® solution provides a foundational enterprise platform that integrates health, safety and environment processes with work and asset management data and processes to provide a single view of your personnel, facilities, assets and operations.

A focus on quality execution

The IBM Maximo solution for health, safety and environment provides capabilities for:

- Audit management
- Incident reporting
- Risk assessment
- Maintenance
- Quality assurance
- Inspection
- Change management
- Permit management
- Condition reporting
- Training as they relate to health, safety and environmental processes
- Chemical Management



When combined with work management, scheduling, preventive maintenance, job plan creation, monitoring, document control, reporting and collaboration, the solution provides a closed-loop management platform focused on quality execution.

If you already have Maximo Asset Management software in place, this solution enables you to link health, safety and environment activities to specific assets, classes of assets, or locations, thereby to provide a venue to view and manage associated risks and compliance. Maximo's solution for health, safety and environment can extend IBM Maximo Asset Management to provide strategic applications for incident management, risk assessment, safety reporting and change management.

Solution features

Action tracking

The IBM Maximo solution provides a tracking application for actions resulting from regulatory and conformance audits, or other internal assessments. As a result, you have a solution for managing the findings and recommendations of internal and external surveys, audits and assessments to closure.

Audits and surveys

Audits and surveys combine with enhanced failure reporting to improve compliance and facilitate the assessment of cumulative risk.

Benefits and losses

The Maximo solution captures benefits associated with improvements or proposed solutions and costs associated with incidents, failures, survey or audit findings, planned or unplanned activities or events and more. The objective is to provide insights into areas for improving operations and safety.

Bypass management

This application manages the process of evaluating risk associated with a bypass and provides management process to ensure that bypasses are reviewed, approved and removed as required.

Certifications

The solution manages multiple different types of certifications, covering materials, people and equipment. These can be used to support processes that require formal certification, such as mechanical completion and commissioning.

Chemical Management

This solution distinguishes chemical items and incorporates any chemical specific inventory management process. It also eliminates the need for a separate chemical management application.

Competency management

The solution improves competency assurance with capabilities for adding, modifying and updating workforce competencies, which include associate competency requirements, permit and certificate requirements and identification and validation of competency requirements on job plans and work orders.

Training tracking

The IBM Maximo solution makes personnel qualification and skills tracking a central function for safety and efficiency in job orders. It includes capabilities for mapping job roles (for employees and contractors) to required training and competencies. It maintains a complete history of personnel job roles, certifications, training and current qualifications, and automatically sends alerts and notifications for upcoming training requirements, expiring certifications or retraining needs. Qualification requirements are aligned with work tasks to enforce safe work standards and integration with third party training management, and HR systems can optimize corporate standards and data consistency.

Condition for work

The solution aggregates similar jobs across assets, groups of assets, areas or individual locations to support opportunity maintenance. This identifies work that can be merged into planned or unplanned work when equipment or systems need to be in a certain operating state to improve efficiency and equipment reliability.

Continuous improvements

The solution helps manage continuous improvement programs such as Six Sigma or similar methods. An enterprise standard and industry best practices are used for documenting improvements at all levels and for all domains so they can be replicated and built upon.

Daily operations report

The solution consolidates data from the operator log and permit to work applications to offer enhanced support for daily operations reporting.

Defect elimination

The solution provides an integrated approach to manage and eliminate mechanical defects. This is a standardized, real-time approach for operations and maintenance to record equipment defects tied to service levels to improve the communication between operations and maintenance and engineering.

Defects and non-conformance management

Safety and reliability depend to a great extent on conforming to policy, engineering standards, regulatory requirements, and specifications and parameters that have been tested, proven safe and approved. The solution provides non-conformance management capabilities designed to automate, manage and streamline the processes of identifying, evaluating, reviewing, and handling non-conforming engineering specifications, materials, components, parts and processes.

Failure reporting

The IBM Maximo solution for health, safety and environment provides supplementary reporting mechanisms to support consistent failure reporting and corrective action (FRACAS) processes. Failure reporting provides enriched data for trending and predictive analysis for process improvements.

Hazards and precaution management

An integrated approach to managing and eliminating hazards supports risk management and improved safety principles. In addition, it provides greater visibility of the risks associated with work requirements in hazardous locations and around hazardous assets and equipment. Precautions support the implementation and management of controls used to mitigate or eliminate hazards.

Incident management

Because incidents occur across organizations that are doing work with assets and equipment in challenging and often hazardous locations, Maximo provides a central application for reporting incidents that span work, personnel, safety, health and environmental areas.

Companies are able to consistently associate incidents to related assets, locations, people, impacted areas and other organizational-wide issues for improved analysis and trending. Powerful workflow, business rules, and resource management can automatically assign personnel to address urgent issues, associate the incident to other related issues, and support root cause analysis, sequence of events recording, solution identification and incident resolution.

Investigation

The solution supports investigations into recurring incidents or defects when root cause analysis or after-action review is required. You can trace past incidents, defects, work orders, earlier corrective actions and solutions or virtually any other type of health, safety and environment activity pertinent to the investigation. Examples of investigative capabilities provided by the solution are:

- Impact assessment of the incident (issue) and global issue management.
- Documentation of issue resolution with derivative benefits and risks.
- Documentation of lessons learned.
- Identification of faults and the contributors to analysis and solutions.

Location profiles

Location profiles provide the ability to define profiles of actual and planned production for a location and plan for board requirements and capacity. This enables improved decision making in areas such as defect elimination and turnaround plans.

Lock Out Tag Out plans

Lock Out Tag Out plans support the planning of template isolation schemes for use on work orders and permits.

Management of Change

The IBM Maximo solution for health, safety and environment offers full management of change process capabilities that are integrated with investigations, incidents, work management and other applications. Transparency and visibility are provided for operations, safety, and maintenance and engineering domains of many types of changes, which include:

- Safety plans
- Environmental controls
- Mechanical controls
- Operating procedures
- Maintenance job plans

A structured, controlled process for planning, reviewing, approving, and implementing changes is provided to improve communications and collaboration, drive more efficient operations, and enable safer working conditions and operations.

Operator log

An electronic log used by shift operators for recording and qualifying events that occur during an individual's shift watch tracks shift staffing, plant operating parameters, log entries, associated qualifying data, and web or document links on an individual plant unit, staff position basis, or both. The solution integrates this log with work management, incident management, and other asset management applications to help improve collaboration.

Operating policy

Your operating policy is linked to your operating procedures and maintenance plans. Performance standards, regulatory drivers, predominant failure modes, production targets and more dictate your operating policy. The solution includes a governance application for structuring your operating policy and operating and maintenance strategies that integrate with work management, change management and other asset management applications. As a result, collaboration between operations, maintenance, and engineering resources is improved.

Operating procedures

The solution provides capabilities for documented, structured, step-by-step operating procedures instead of relying on unstructured text files. This approach better integrates operations and maintenance resources. For example, operating procedures can be placed in a maintenance job plan when work from both groups is required. This approach better supports compliance management. These capabilities also integrate with work management, change management and other asset management applications to help improve collaboration.

Permit and certificate types

Defines permit types and certificates for use on job plans and work orders. A critical part of safety culture is identifying the hazardous locations within our operating environment and the appropriate procedures for isolation and safety. Having this capability integrated with work management planning and scheduling increases the effectiveness of work management and improves overall safety performance.

Permit to Work

Supports improved communication between maintenance, operations and engineering to enhance safety with customized Permit to Work systems.

Preparation activities

Preparation activities in Maximo Asset Management extends to work order tracking to support activities such as turnaround management, modification projects, commissioning, yard stays and emergency preparedness. This is linked to audit, survey, and standard action groups and location profiles to provide a comprehensive capability to extend the type of work managed in Maximo across the asset lifecycle.

Regulatory compliance

Health, safety and environmental statutes and requirements apply to assets and equipment in certain locations and have work procedures in place to manage compliance. The IBM Maximo solution compares regulatory requirements with assets and locations and associates job plans and work orders with these regulations to help manage compliance and reduce costs.

Risk assessments

The IBM Maximo solution offers an iterative risk assessment capability that links health, safety and environment activities and organizational data to help standardize how an enterprise manages risk in challenging operating environments. Integrating location, assets and equipment, job plans, work orders, and change management records with hazard identification provides a powerful solution to manage risk, improve safety and reliability and more. Each risk assessment calculates the consequence, likelihood, severity, rank, priority, mitigation rank, and mitigation priority to help you assess overall risk.

Risk matrixes

With the IBM Maximo solution, you can model the probability and consequences of events that support risk management processes. Standardization of how risk is modeled in an enterprise provides a common approach that spans operating locations, assets, equipment and different types of work, which can improve how your enterprise manages risk, promotes a safety culture, improves reliability and manages compliance.

Solutions

A searchable learning repository with lessons learned; successful operational, maintenance and engineering issue resolutions; and environmental context, history, scenarios and experiences is available for sharing and applies to different domains and levels. As a result, you can avoid duplicating resolution efforts.

Standard action groups

Offers the capability to create multiple different types of checklists and associate these with permits, work orders, certifications, incidents and management of change.

Conclusion

The IBM Maximo solution for health, safety and environment is well suited to meet key business and IT requirements, such as:

| Business and IT requirements | IBM Maximo solution |
|---|---|
| A central repository or database for compliance information and a global system of record with an understanding of the history, quality and context of safety, operational, and engineering data. | A foundational enterprise platform provides a <i>single view of your personnel, facilities, assets and operations</i> . |
| A rules or workflow-based system to ensure that procedures are followed with the ability to identify specific events or exceptions of an incident or investigation | All records and applications can be related and linked to one another, which enables <i>traceability</i> and accurate <i>auditing</i> of event progression, including plans, decisions, approvals, implementations and validations. |
| Integration with other applications or data sources such as ERP or Enterprise Asset Management solution. | <i>Integrated business architecture and configurable workflow</i> enables organizations to more easily model their processes in accordance with organizational and regulatory needs versus a rigid software-driven process. |
| Reporting, analytics or both | Role-based <i>Start Centers</i> enable users to personalize their information and publish <i>KPI's</i> , query-based charts and graphs, bulletin boards for work groups or corporate communications. |

For more information

To learn more about the IBM Maximo solution for Health, Safety, and Environment, please contact your IBM marketing representative or IBM Business Partner, or visit ibm.com.



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